CLAIMS

1. A photoelectric conversion device comprising a semiconductor and an organic electrically conducting agent,

wherein said organic electrically conducting agent exhibits a melting temperature TM which is lower than the operation temperature of the photoelectric conversion device.

2. A photoelectric conversion device comprising a semiconductor and an organic electrically conducting agent,

wherein the melting temperature Tm of the organic electrically conducting agent is about 140 °C or less.

3. A photoelectric conversion device comprising a semiconductor and an organic electrically conducting agent,

wherein the organic electrically conducting agent is present in a solid but noncrystalline form.

4. The photelectric conversion device according to claim 3,

wherein the organic electrically conducting agent is present in an amorphous form.

5. The photoelectric conversion device according to claim 3, wherein the glass transition temperature Tg of the organic electrically conducting agent is at or below the operation temperature range of the photoelectric device.

6. A photoelectric conversion device comprising a semiconductor and an organic electrically conducting agent,

wherein said organic electrically conducting agent exhibits a glass-transition temperature Tg of about 60°C or less. .

7. The photoelectric conversion device according to claim 1,

wherein the organic electrically conducting agent exhibits a glass transition temperature Tg of about 60°C or less.

8. The photoelectric device according to claim 5, wherein said organic electrically conducting agent exhibits a glass-transition temperature Tg of about 40 °C or less, preferably of about 30 °C or less and more preferably of about 20°C or less.

9. The photoelectric device according to claim 8, wherein said organic electrically conducting agent exhibits a glass-transition temperature Tg of about 10 °C or less and preferably of about 0 °C or less.

10. The photoelectric device according to claim 1, wherein the semiconductor is sensitized with a dye.

11. The photoelectric device according to claim 1 wherein said organic electrically conducting agent comprises at least one organic compound.

12. The photoelectric device according to claim 11 wherein said organic electrically conducting agent comprises a mixture of at least two organic compounds.

13. The photoelectric device according to claim 11 wherein said organic electrically conducting agent further comprises at least one dopant.

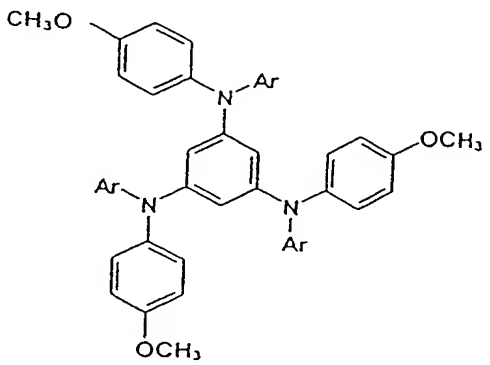
14. The photoelectric device according to claim 1 wherein said organic electrically conducting agent is a hole transporting agent.

15. The photoelectric device according to claim 10 wherein said dye is a ruthenium complex.

16. The photoelectric device according to claim 1 wherein said semiconductor is porous.

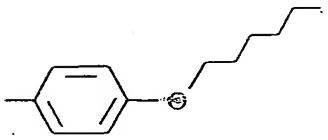
17. The photoelectric device according to claim 16 wherein said semiconductor comprises nanoparticles, preferably nanoparticles of Ti02.

18. A compound useful as a hole transporting agent which is a triphenyldiamine derivative represented by formula (1)



(1)

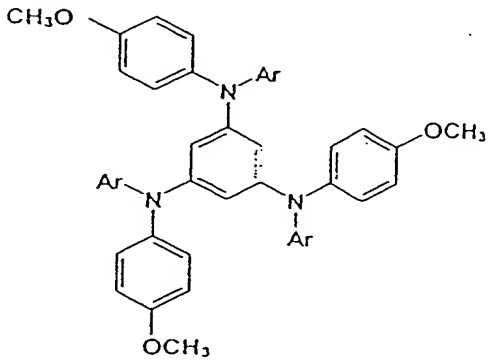
wherein Ar is a substituent represented by formula (11)



(11)

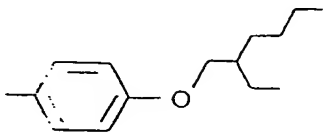
wherein Ar is a substituent represented by formula (IV)

19. A compound useful as a hole transporting agent which is a triphenyldiamine derivative represented by formula (III)



(111)

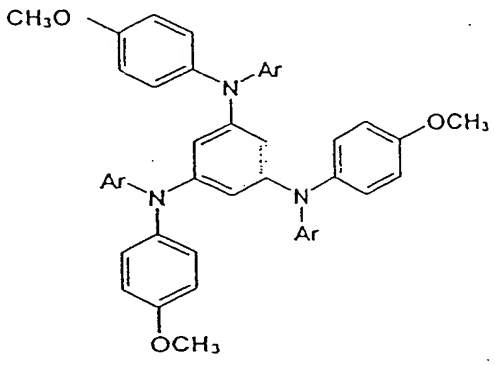
wherein Ar is a substituent represented by formula (IV)



(1V)

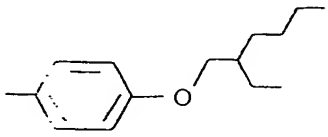
20. Use of the compound according to claim 18 in a photoelectric conversion, particularly as an electrically conducting agent.

21. Mixture comprising a first compound according to claim 18 and a second compound which is a triphenyldiamine derivative represented by formula (III)



(111)

wherein Ar is a substituent represented by formula (IV)



(1V)

22. Mixture according to claim 21, wherein the ratio in said mixture of the first compound in relation to the second compound is from about 60 : 40 to about 20 : 80, preferably 40 : 60,

wherein the amount of each compound is expressed as wt.-% of the total weight of the mixture.

23. Use of the mixture according to claim 22 in a photoelectric conversion device, particularly as an electrically conducting agent.

24. Use of the mixture according to claim 22 for the manufacture of a photoelectric conversion device, particularly as an electrically conducting agent.

25. Method for the production of a photoelectric conversion device, comprising the step of applying a compound according to claim 18 to a semiconductor.

26. The method for the production of a photoelectric according to claim 25, wherein the semiconductor is sensitized with a dye.

27. The method according to claim 25, wherein the application step is carried out at a temperature at or above the glass-transition temperature of the electrically conducting agent.

28. The method according to claim 25, wherein the method further comprises at least one of the following steps:

- providing a semiconductor, preferably sensitized with a dye,
- melting the organic electrically conducting agent,
- applying said organic electrically agent to said semiconductor sensitized with a dye, and
- connecting electrodes to said semiconductor and to said organic electrically conducting agent.

29. The method according to claim 25, wherein said organic electrically conducting agent is applied to said semiconductor such that a layer of said agent persists on top of said semiconductor.

30. The method according to claim 25, wherein said method comprises the step of cooling the semiconductor and said organic electrically conducting agent to a temperature below said

melting temperature and above the glass transition temperature of said organic electrically conducting agent.

31. Solar cell comprising a photoelectric conversion device according to claim 1.

32. The photoelectric conversion device according to claim 2,

wherein the organic electrically conducting agent exhibits a glass transition temperature Tg of about 60°C or less.

33. The photoelectric conversion device according to claim 3.

34. The photoelectric device according to claim 2, wherein the semiconductor is sensitized with a dye.

35. The photoelectric device according to claim 3, wherein the semiconductor is sensitized with a dye.

36. The photoelectric device according to claim 6, wherein the semiconductor is sensitized with a dye.

37. The photoelectric device according to claim 2 wherein said organic electrically conducting agent comprises at least one organic compound.

38. The photoelectric device according to claim 3 wherein said organic electrically conducting agent comprises at least one organic compound.

39. The photoelectric device according to claim 6 wherein said organic electrically conducting agent comprises at least one organic compound.

40. The photoelectric device according to claim 37 wherein said organic electrically conducting agent further comprises at least one dopant.

41. The photoelectric device according to claim 38 wherein said organic electrically conducting agent further comprises at least one dopant.

42. The photoelectric device according to claim 39 wherein said organic electrically conducting agent further comprises at least one dopant.

43. The photoelectric device according to claim 2 wherein said organic electrically conducting agent is a hole transporting agent.

44. The photoelectric device according to claim 3 wherein said organic electrically conducting agent is a hole transporting agent.

45. The photoelectric device according to claim 6 wherein said organic electrically conducting agent is a hole transporting agent.

46. The photoelectric device according to claim 34 wherein said dye is a ruthenium complex.

47. The photoelectric device according to claim 35 wherein said dye is a ruthenium complex.

48. The photoelectric device according to claim 36 wherein said dye is a ruthenium complex.

49. The photoelectric device according to claim 2 wherein said semiconductor is porous

50. The photoelectric device according to claim 3 wherein said semiconductor is porous

51. The photoelectric device according to claim 6 wherein said semiconductor is porous

52. The photoelectric device according to claim 49 wherein said semiconductor comprises nanoparticles, preferably nanoparticles of Ti02.

53. The photoelectric device according to claim 50 wherein said semiconductor comprises nanoparticles, preferably nanoparticles of Ti02.

54. The photoelectric device according to claim 51 wherein said semiconductor comprises nanoparticles, preferably nanoparticles of Ti02.

55. Use of the compound according to claim 19 in a photoelectric conversion, particularly as an electrically conducting agent.

56. Method for the production of a photoelectric conversion device, comprising the step of applying a compound according to claim 19 to a semiconductor.

57. Method for the production of a photoelectric conversion device, comprising the step of applying a mixture according to claim 21 semiconductor.

58. The method for the production of a photoelectric according to claim 56, wherein the semiconductor is sensitized with a dye.

59. The method for the production of a photoelectric according to claim 57, wherein the semiconductor is sensitized with a dye.

60. Solar cell comprising a photoelectric conversion device according to claim 2.

61. Solar cell comprising a photoelectric conversion device according to claim 3.

62. Solar cell comprising a photoelectric conversion device according to claim 6.